of regular paired bundles of bristles, this Cercaria differs from all others known, has apparently overlooked the work of Valette St. George, wherein he figures *Cercaria setifera* Müll. and *C. elegans* Müll., both inhabiting the Mediterranean sea. The tails are provided with bundles of setæ in pairs, and are much as in Mr. Fewkes species.——In his tenth census report on the Oyster Fishery, Mr. E. Ingersoll describes the way in which the star-fish gains entrance to the oyster shell in order to feed upon it. Having met with an oyster, scallop, or other thin-shelled mollusk, and young ones are preferred because their armor is weak, the star-fish folds his five arms about it in a firm and deadly grasp. Then protruding the muscular ring at the entrance of his stomach through the circular opening in the centre of the under side of the disc, which he previously describes, he seizes the thin, newly-grown posterior edge of the shell, which oystermen call the "nib" or "bill," and little by little breaks it off. Then the star-fish protrudes into the shell the distensible mouth of the stomach, until it can seize upon the body of the mollusk. "The consumption of this begins at once, and as fast as the poor oyster's or scallop's body is drawn within its folds, the capacious stomach is pushed farther and farther in, until at last if the mollusk be a large one, the pouches that I have described as packed away in the cavities of the ray, are also drawn forth, and the starfish has substantially turned himself wrong side out. If he is dredged up at this stage as many examples constantly happen to be, and dragged away from his half-eaten prey, his stomach will be found hanging out of the centre of his body for a distance, perhaps, equal to half the length of one of the arms, and filled with the juices of the oyster he has devoured, and whose body, within the shell, will be found almost as squarely trimmed as could have been done by scissors." The wholesale manner in which the star-fish invades oyster beds, and the great increase in numbers of this creature since oyster beds have been planted are described. The injury done to oyster beds by the star-fish from Buzzard's bay to the western end of Long Island sound is estimated at $200,000 a year.

ENTOMOLOGY.[1]

NOTES FROM ILLINOIS; GRAIN-FEEDING HABITS OF FIELD CRICKET.—One morning after a rainy night, as I was passing along the highway, I noticed one of our common field crickets working at a kernel of corn that had dropped from some farmer's wagon while on the way to market. The rain had softened the grain; and after watching the insect some time, I found it was eating the germ of the softened kernel; I watched patiently until the cricket seemed to have satisfied its hunger, and found the germ had all

[1] This department is edited by PROF. C. V. RILEY, Washington, D. C., to whom communications, books for notice, etc., should be sent.

been eaten away. Early in the fall I found them in cornfields eating the crowns of kernels or ears that had blown to the ground, something I had always before attributed to mice.

The same insect has annoyed farmers considerably in another manner. Much of the harvesting is done with self-binding harvesting machines, using cord for binding. Judge of the surprise and chagrin of the farmer when on drawing in his stacks of grain, to find instead of compact bound sheaves only a mass of unbound grain, the bands of cord having been cut in many places by the crickets. Also I noticed numbers of our common black blister-beetle *(Epicauta pennsylvanica)* denuding the ears of corn of the silk before the kernel had been fecundated, thereby either partially or wholly destroying the ear. I have also found *Diabrotica fossata* Lec., which usually feeds upon the pollen of the flowers of the Compositæ, varying its bill of fare by eating the pollen of corn. Its near relative, *D. longicornis* Say, which I fear is to be the future pest of the cornfield, I found feeding upon both silk and kernel; one individual had excavated nearly the whole interior of a kernel, and was still at work, being so far advanced into the interior as to leave only the tip of its abdomen visible. I had supposed the insect relied upon the flowers of thistle and some of the Compositæ for its food, but now think were all of these taken away it would find abundant sustenance in the cornfield itself.—*F. M. Webster, Waterman, Ills.*

Habits of Cybocephalus.—There is nothing recorded, to our knowledge, concerning the habits of this little Nitidulid genus, distinguished by its peculiar appearance from the allied genera. In the summer of 1881 we received from Dr. J. H. Mellichamp of Bluffton, S. C., several twigs of *Pinus elliottii*, the leaves of which were covered with a Coccid, *Chionaspis pinifoliæ* Fitch. We kept these twigs in a jar in the hope of obtaining Chalcid parasites from the scales and were rewarded by the appearance of several specimens of *Cybocephalus nigritulus* Lec. We had then every reason to suspect that this little beetle, either as larva, or imago, or in both stages, was feeding upon the scales. Our presumption has been lately corroborated by receiving numerous specimens of *C. californicus* Horn, sent by Mrs. A. E. Bush from San Jose, California, with the remark that they were found on an apple twig badly infested by a scale insect.

One Effect of the Mississippi Floods.—Few evils are without their compensating benefit. The planters of the Teche country will, in all probability, be free for a number of years from the attacks of a beetle *(Ligyrus rugiceps)* which has of late years proved very destructive to the sugar cane there. It will undoubtedly have been drowned out by the months of submersion which the fields of the infested region have suffered. Late reports indicate that even the stubble has become spoiled, and that little, if

any, seed cane will be saved the present year. This will necessitate an importation of seed on a large scale, and we shall be agreeably surprised if the accompanying importation of some new insect foe to the sugar cane is not chronicled within a very few years.

DORYPHORA 10-LINEATA IN ENGLAND.—Mr. J. Jenner Weir, a member of the London Entomological Society, found early last spring a living specimen of *Doryphora 10-lineata* which had been taken to London from this country in a barrel of potatoes.

DR. DIMMOCK'S INAUGURAL DISSERTATION.—We sincerely congratulate Dr. Geo. Dimmock, of Cambridge, Mass., on the successful completion of his dissertation on "The anatomy of the mouth-parts and of the sucking apparatus of some Diptera," by which he lately obtained the degree of Ph.D. at Leipzig University. It is an important contribution to our knowledge of comparative anatomy, and fully justifies us in expecting most valuable work from its author in this direction in the future. Mr. Scudder's remarks at the Boston meeting of the American Association for the Advancement of Science, upon the field offered by insect anatomy and physiology cannot be too heartily endorsed, and we consider Dr. Dimmock's paper a forerunner of much excellent work by American students in the near future.

THE TRIUNGULIN OF MELOIDÆ.—"Nothing new under the sun!" From a recent letter received from our friend M. Jules Lichtenstein, of Montpellier, we learn that the old entomological writer Johann Leonhard Frisch in his remarkable work "Beschreibung von allerley Insecten in Teutschland, etc.," tome VI., published in 1727, was well acquainted with and describes, p. 15, the triungulin of *Meloë proscarabæus;* while some sixty years later Réaumur, DeGeer, and other old entomological writers did not know what the triungulin was. Frisch was also familiar with the male of the Coccidæ.

FOSSIL TINEIDS.—Mr. V. T. Chambers communicates to *Nature* (Vol. 25, p. 529) as corroborative of the Tineid nature of certain serpentine, thread-like trails found by Lesquereux on leaves of magnolia from the Tertiary of Alaska, that he distinctly remembers seeing the figure by the same author of a fossil leaf of *Acer* on which there were several blotches, one of which bore a strong resemblance to the mine of *Lithocolletis aceriella*, now made in leaves of *Acer saccharinum.*

CLASSIFICATION OF NORTH AMERICAN COLEOPTERA.—We are glad to learn that the new edition of the classification of North American Coleoptera to be published by the Smithsonian Institution, is being rapidly pushed to completion by Messrs. LeConte and Horn. The first edition was never completed and is now out of print, but it did more to promote Coleopterology in the United

States than any other work published either before or since. It has become somewhat antiquated, however, and it is gratifying to know that we shall soon have a new edition brought up to date and written by the two men most competent to do the work.

EXCHANGES WITH SOUTH FRANCE.—M. Franz Richter, assistant to M. Lichtenstein, at Montpellier, offers all objects of natural history in the south of France, and more especially southern *Hymenoptera* well-named, Aphididæ and Coccidæ in microscopic preparations. He has also sets of *Phylloxera* in the various life-stages.

HIBERNATION OF THE ARMY WORM.—The experience of the past winter has very fully confirmed the revised conclusions we reached in 1880 respecting the hibernation of *Leucania unipuncta* in the larva state. We found the larvæ of all sizes throughout the milder winter weather in Washington, and the first moths issued from them early in March or about the time when in South Georgia what may safely be assumed to have been a second generation of worms for that latitude were found of all sizes. At the present writing, in Washington the second generation of moths are ovipositing, preferring, in the open field, as we rightly inferred in 1877, old hay and stubble and coarse grass or corn stalks to the green grass, whenever the former are at hand. From the widespread occurrence of this insect wherever we have sought it so far, we conclude that much damage will result from the second and third broods of worms in the more northern States.—*C. V. Riley, May 4, 1882.*

ANTHROPOLOGY.[1]

DR. RAU'S LATEST CONTRIBUTION TO ANTHROPOLOGY.—The Smithsonian Institution has done a very important service to archæology by collecting into a single volume all the papers of Dr. Rau published in the Smithsonian Annual Reports. The work includes the following monographs:

Baegert's account of the aboriginal inhabitants of the Californian peninsula (Reports 1863 and 1864).
Agricultural Implements of the North American stone period (1863).
Artificial shell deposits in New Jersey (1864).
Indian Pottery (1866).
Drilling in stone without metal (1868).
A deposit of flint implements in So. Illinois (1868).
Memoir of C. F. P. von Martius (1869).
Ancient aboriginal trade in North America (1872).
North American Stone Implements (1872).
The prehistoric antiquities of Hungary (1876).
The stock-in-trade of an aboriginal lapidary (1877).
Observations on a gold ornament from a mound in Florida (1877).

Inasmuch as these articles were reprinted from stereotype

[1] Edited by Professor OTIS T. MASON, 1305 Q. street, N. W., Washington, D. C.